Title (en)

Device and method for binarizing image

Title (de)

Vorrichtung und Verfahren zur Binarisierung von Bildern

Title (fr)

Dispositif et procédé de binarisation d'image

Publication

EP 1455299 A3 20060503 (EN)

Application

EP 04002061 A 20040130

Priority

KR 20030006420 A 20030130

Abstract (en)

[origin: EP1455299A2] Disclosed is a device for binarizing an image. The device comprises an input part for receiving an image; a block classification part for dividing the received image into blocks, and classifying the divided blocks into character blocks and background blocks; an edge enhancement part for enhancing edges of a character block using relations between neighboring pixels in the character block classified by the block classification part, and generating a threshold for distinguishing character pixels and background pixels of the character block; and a binarization part for binarizing pixels of character blocks output from the edge enhancement part into a first brightness value for character pixels and a second brightness value for background pixels by comparing the pixels of the character blocks with the threshold, and binarizing pixels of background blocks output from the block classification part into the second brightness value.

IPC 8 full level

H04N 9/00 (2006.01); **G06T 5/00** (2006.01); **G06V 30/162** (2022.01); **H04N 1/403** (2006.01); **H04N 1/409** (2006.01); G06V 30/10 (2022.01)

CPC (source: EP KR US)

G06T 7/12 (2016.12 - EP US); **G06V 30/162** (2022.01 - EP US); **G06V 30/414** (2022.01 - EP US); **H04N 1/403** (2013.01 - EP US); **H04N 1/4092** (2013.01 - EP US); **H04N 9/00** (2013.01 - KR); G06T 2207/20021 (2013.01 - EP US); G06T 2207/20052 (2013.01 - EP US); G06T 2207/20192 (2013.01 - EP US); G06V 30/10 (2022.01 - EP US)

Citation (search report)

- [X] US 5535013 A 19960709 - MURATA KAZUYUKI [JP]
- [A] EP 1117072 A1 20010718 - KONINKL PHILIPS ELECTRONICS NV [NL]
- [X] QUEIROZ DE R L ET AL: "FAST SEGMENTATION OF THE JPEG COMPRESSED DOCUMENTS", JOURNAL OF ELECTRONIC IMAGING, SPIE / IS & T, US, vol. 7, no. 2, 1 April 1998 (1998-04-01), pages 367 - 377, XP000750393, ISSN: 1017-9909
- [X] OSAMU NAKAMURA ET AL: "EXTRACTION OF PHOTOGRAPHIC AREA FROM DOCUMENT IMAGES", ELECTRONICS & COMMUNICATIONS IN JAPAN, PART I - COMMUNICATIONS, WILEY, HOBOKEN, NJ, US, vol. 71, no. 6, 1 June 1988 (1988-06-01), pages 76 - 85, XP000118415, ISSN: 8756-6621
- [X] HEI TAO FUNG ET AL: "SEGMENTATION OF SCANNED DOCUMENTS FOR EFFICIENT COMPRESSION", PROCEEDINGS OF THE SPIE, SPIE, BELLINGHAM, VA, US, vol. 2727, 17 March 1996 (1996-03-17), pages 701 - 712, XP000827642, ISSN: 0277-786X
- [A] MO S ET AL: "ADAPTIVE, QUADRATIC PREPROCESSING OF DOCUMENT IMAGES FOR BINARIZATION", IEEE TRANSACTIONS ON IMAGE PROCESSING, IEEE SERVICE CENTER, PISCATAWAY, NJ, US, vol. 7, no. 7, July 1998 (1998-07-01), pages 992 - 999, XP000766012, ISSN: 1057-7149
- [A] RAMPONI G: "A noise-smoothing nonlinear operator for the preprocessing of text and graphics images", IMAGE PROCESSING AND ITS APPLICATIONS, 1992., INTERNATIONAL CONFERENCE ON MAASTRICHT, NETHERLANDS, LONDON, UK,IEE, UK, 1992, pages 242 - 245, XP006500163, ISBN: 0-85296-543-5
- [A] RAMPONI G ET AL: "ENHANCING DOCUMENT IMAGES WITH A QUADRATIC FILTER", SIGNAL PROCESSING, ELSEVIER SCIENCE PUBLISHERS B.V. AMSTERDAM, NL, vol. 33, no. 1, 1 July 1993 (1993-07-01), pages 23 - 34, XP000417758, ISSN: 0165-1684

Cited by

EP2084819A4; US2020380657A1; US11087448B2

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR

DOCDB simple family (publication)

EP 1455299 A2 20040908; **EP 1455299 A3 20060503**; CN 1311394 C 20070418; CN 1519770 A 20040811; KR 100703284 B1 20070403; KR 20040069867 A 20040806; US 2005008250 A1 20050113; US 7567709 B2 20090728

DOCDB simple family (application)

EP 04002061 A 20040130; CN 200410002564 A 20040130; KR 20030006420 A 20030130; US 76706104 A 20040130